

Abstract Submitted
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SOL Properties of HHFW Electron Heating Generated H-modes in NSTX¹ JOEL HOSEA, R.E. BELL, A. DIALLO, S. GERHARDT, M.A. JAWORSKI, G.J. KRAMER, B.P. LEBLANC, R.J. PERKINS, C.K. PHILLIPS, L. ROQUEMORE, G. TAYLOR, J.R. WILSON, PPPL, J-W. AHN, T.K. GRAY, R. MAINGI, A. MCLEAN, P.M. RYAN, ORNL, S. SABBAGH, Columbia U., and the NSTX Team — In neutral beam generated H-modes, it has been shown that high harmonic fast wave power lost to the divertor regions flows along the magnetic field lines passing in front of the antenna [1]. Here we extend this power flow study to the case of HHFW generated H-modes [2]. Using the field strike point spiral from the Spiral code as a guide (Langmuir probe characteristics near the outer vessel strike radius are used to specify the best equilibrium for the code), it is found that for comparable launched RF powers the power loss in the outer scrape off layer (SOL) is generally much less for the HHFW generated H-mode case. Also, much of the heating in the lower divertor region is at/near the outer vessel strike radius as expected for low RF power loss in the SOL. The dependence of the loss at the outer vessel strike radius on the possible presence of ETG turbulence will be discussed.

[1] R. Perkins et al., to be published in Phys Rev Letters.

[2] J. Hosea et al, EPS Conf. Proc. (Strasbourg 2011) paper P2-098.

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